

### **REMARKS**

This amendment is responsive to the non-final Office Action of July 7, 2009. Reconsideration and allowance of claims 1-14 are requested.

#### **The Office Action**

Claim 5-7 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Wu ("Computing Parametric Geon Descriptions of 3D Multi-part Objects", Thesis, 1996).

Claims 1-4 and 8-9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the Wu in view of Holten-Lund et al. (VRML Visualization in a Surgery Planning and Diagnosis Application, in Proc. VRML, 2000).

#### **The Present Application**

The present application is directed to determining geometrical properties of an anatomical object. An extended deformable surface model is used to generate an adapted deformable surface model from geometrical properties are extracted.

#### **The References of Record**

Wu discloses a method for describing 3D objects by fitting parametric geons to parts of the 3D object and optimizing the fit by minimizing a fitting residual.

Holten-Lund et al. discloses a method for fitting an iso-surface to an anatomical feature. Primitives are approximated based on the fitted iso-surface and then quantified to measure the topology of the anatomical feature.

#### **The Claims Distinguish Patentably Over the References of Record**

Claims 1-4 and 8-9 Are Not Obvious Over Wu In View Of Holten Lund et al.

**Claim 1** calls for a method for determining geometrical properties of a structure of an object display in an image, the method includes adapting a deformable surface model to the object. Additional information is applied to the adapted deformable model and geometrical properties of the structure of the object from the adapted deformable surface model to which the additional geometrical information

has been applied. The Examiner applies Wu in combination with Holten-Lund to remedy that "Wu does not disclose extracting the geometric properties of the structure of the object from the adapted deformable surface model to which additional geometric information has been applied". The Examiner states that the iso-surface is a adapted deformable surface model to which the Applicants respectfully disagree. Holten-Lund discloses that acetabular dysplasia is a hereditary bone disorder where the acetabulum is deformed, and goes on to discloses that "the deformation can not be quantified freely in 3D". Holten-Lund is referring to the deformation of acetabulum and not the iso-surface. Holten-Lund does not teach in the cited reference that iso-surface is deformable and cannot teach of an adapted deformable surface model. Furthermore, in Figures 6 and 9 the iso-surface maintains a spherical shape and is not adapted to the object. Therefore, it would not have been obvious to combine Wu and Holten-Lund because Holten-Lund does not teach of adapting a deformable surface model.

For the reasons set forth above, it is submitted that Wu in view of Holten-Lund fails to teach all of the features of the Applicants' invention; therefore, does not anticipate **claim 1**. Applicants submit that the subject application is patently distinguished from the cited prior art and respectfully request the rejection of claim 1 be withdrawn. Accordingly, it is submitted that **claims 2-4 dependent therefrom** distinguish patentably and over the references of record.

**Claim 8** calls for an image processing device comprising an image processor for determining geometrical properties of a structure of an object display in an image, the method includes adapting a deformable surface model to the object. Additional information is applied to the adapted deformable model and geometrical properties of the structure of the object from the adapted deformable surface model to which the additional geometrical information has been applied. The Examiner applies Wu in combination with Holten-Lund to remedy that "Wu does not disclose extracting the geometric properties of the structure of the object from the adapted deformable surface model to which additional geometric information has been applied". The Examiner states that the iso-surface is an adapted deformable surface model to which the Applicants respectfully disagree. Holten-Lund discloses that acetabular dysplasia is a hereditary bone disorder where the acetabulum is deformed,

and goes on to disclose that “the deformation can not be quantified freely in 3D”. Holten-Lund is referring to the deformation of acetabulum and not the iso-surface. Holten-Lund does not teach in the cited reference that iso-surface is deformable and cannot teach of an adapted deformable surface model. Furthermore, in Figures 6 and 9 the iso-surface maintains a spherical shape and is not adapted to the object. Therefore, it would not have been obvious to combine Wu and Holten-Lund because Holten-Lund does not teach of adapting a deformable surface model.

For the reasons set forth above, it is submitted that Wu in view of Holten-Lund fails to teach all of the features of the Applicants’ invention; therefore, does not anticipate **claim 8**. Applicants submit that the subject application is patentably distinguished from the cited prior art and respectfully request the rejection of claim 8 be withdrawn.

**Claim 9** calls for a computer-readable medium having processor instructions for controlling a processor to perform the steps of claim 8. Accordingly, it is submitted that **claim 9 dependent therefrom** distinguish patentably and over the references of record.

New **claims 10-14** replaces cancelled claims 5-7.

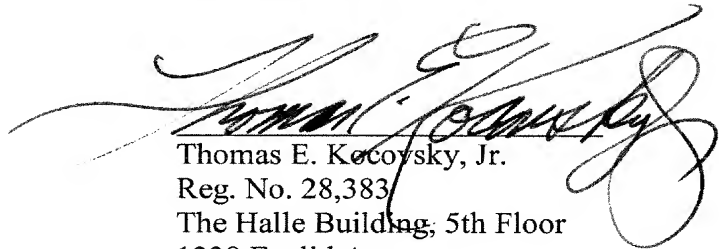
**CONCLUSION**

For the reasons set forth above, it is submitted that claims 1-14 distinguish patentably over the references of record and meet all statutory requirements. An early allowance of all claims is requested.

In the event the Examiner considers personal contact advantageous to the disposition of this case, the Examiner is requested to telephone Thomas E. Kocovsky at 216.363.9000.

Respectfully submitted,

Fay Sharpe LLP

A large, stylized handwritten signature in black ink, which appears to read "Thomas E. Kocovsky, Jr.", is written over the printed name and address.

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